

REMARKS

Claims 1-51 are pending in the application.

Claims 17-24 and 41-48 are withdrawn from consideration.

Claims 1-16, 25-40 and 49 and 51 are rejected.

Claims 1-16, 25-40 and 49-51 are rejected under 35 U.S.C. 103(a).

Claims 1 and 25 are amended.

Claims 49-51 are cancelled.

No new matter is added.

Claims 1-16 and 25-40 remain in the case for reconsideration.

Applicants request reconsideration and allowance of the light of the above amendment and following remarks.

Claim Rejections – 35 USC § 103

Claims 1-16, 25-40 and 49-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,372,967 issued to Sundaram et al (“Sundaram”) in view of U.S. Pat. No. 6,236,538 issued to Yamada et al. (“Yamada”), both are previously applied, and U.S. Pat. No. 5,863,806 issued to Lue (“Lue”), newly cited.

Applicant respectfully traverses the rejections.

Claim 1 is amended to recite,

“forming a semicircular columnar groove in an insulating layer on a semiconductor substrate;

depositing a conductive material layer over the insulating layer having the groove;
patterning the conductive material layer to form underlying conductive lines with a predetermined distance therebetween on said groove;

forming a cylindrical insulating layer in said groove formed with said underlying conductive lines and on the surface of said substrate, wherein an upper portion of said cylindrical insulator protrudes from an upper surface of said groove; and

forming upper conductive lines said insulator to contact with said underlying conductive lines, wherein said upper conductive lines extend up and around said upper portion of said cylindrical insulator to form a rounded upper conductive line, the upper conductive lines having a substantially uniform thickness conformally formed on said cylindrical insulator protruding from the upper surface of said groove.

In contrast, in Lue, the field diffusion regions 36 are formed instead of the patterned conductive material as in the claimed invention. Also, in Lue, the upper conductive line 48 formed on the insulator 44 does not have “a substantially uniform thickness conformally formed on the insulator,” as recited in claim 1 of the present application.

Furthermore, in Lue, a groove is not formed in an insulating layer as in the claimed invention or other cited references. In particular, in Lue, as shown in FIG. 3A, the diffusion region 36 is formed in the semiconductor substrate 30 and it is merely expanded during the formation of the field oxide region 38.

Therefore, the way that the device of Lue, e.g., conductive lines, is formed is very different from the way that the device of both the Sundaram and Yamada devices, not to mention the claimed invention are formed. For these reasons, one skilled in the art would not combine Lue with other cited references to reach the claimed invention because of their big differences in their device structures. Compare, for example, FIG. 2 of Lue with FIG. 5 of Sundaram.

Also, the cited references, either alone or in combination, does not teach or suggest all of the limitations of claim 1, for example, “the upper conductive lines having a substantially uniform thickness conformally formed on said cylindrical insulator protruding from the upper surface of said groove.”

As a result, the rejections do not present a *prima facie* case of obviousness.

For at least these reasons, claim 1 is believed to be allowable over the cited references and applicant respectfully requests allowance of claim 1.

Also, at least for the reasons given for amended claim 1, claims 2-16, which depend from amended claim 1, are believed to be allowable over the cited references and the applicants respectfully request their allowance.

Furthermore, for the same reasons discussed with reference to claim 1, claim 25, which recites limitations similar to claim 1, is also allowable. Also, claims 26-40, which depend from claim 25, are allowable for their dependency and their own merits.

For the foregoing reasons, reconsideration and allowance of claims 1-16 and 25-40 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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Limited Recognition under 37 CFR § 10.9(b)

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